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INV.: Kenzai Kasai et al.

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Bibliography.

- (19) [Country of Issue] Japan Patent Office (JP)
- (12) [Official Gazette Type] Open patent official report (A)
- (11) [Publication No.] JP, 10-35507, A.
- (43) [Date of Publication] February 10, Heisei 10 (1998).
- (54) [Title of the Invention] Folding formula baby carriage.
- (51) [International Patent Classification (6th Edition)]

B62B 7/08

[FI]

B62B 7/08

USPS EXPRESS MAIL
EV 338 198 354 US
AUGUST 19 2003

[Request for Examination] ****

[The number of claims] 3.

[Mode of Application] OL.

[Number of Pages] 8.

(21) [Filing Number] Japanese Patent Application No. 9-111175.

(62) [Divisional Application] Division of Japanese Patent Application No. 3-2315.

(22) [Filing Date] January 11, Heisei 3 (1991).

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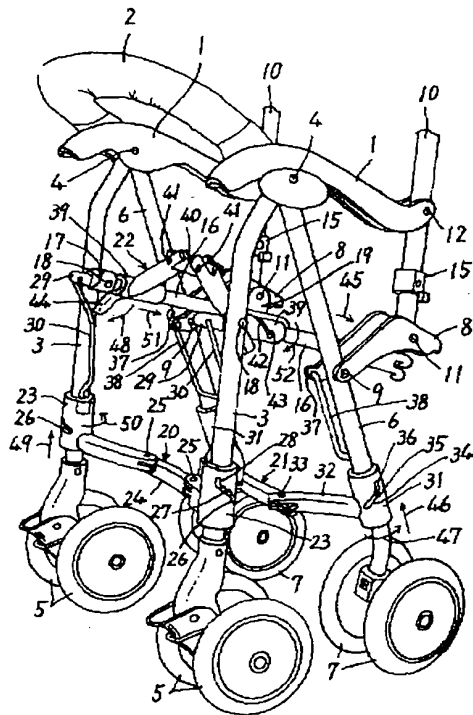
Summary.

(57) [Abstract]

[Technical problem] The movement of the member which constitutes each side of the skeleton of a folding formula baby carriage is interlocked with, and folding of the member which specifies the crosswise size of a skeleton is made possible.

[Means for Solution] By rotation of the arrow 48 direction of the side rod 16 which receives the nose gear 3, the nose-gear sleeve 23 can pull up in the arrow 49 direction through the nose-gear rigidity link 30. Although the guide pin 27 prepared in the nose gear 3 in the guide slot 26 formed in the nose-gear sleeve 23 at this time moves, since the guide slot 26 is prolonged spirally, the nose-gear sleeve 23 is rotated by arrow 50 direction. Therefore, the nose-gear connecting linkage 24 passed among one pair of nose-gear sleeves 23 bends, and it is bent through a point 25. the hind leg connection to which the same composition is passed among one pair of hind legs 6 — the side rod connection passed between a member 21 and the one-pair side rod 16 — it is adopted also in a member 22

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CLAIMS

[Claim(s)]

[Claim 1] So that it may have the following, rotation movement of each aforementioned pars-inflexa material centering on the supporting pivotably pivotably point of the above 1st may be told to each aforementioned hind leg sleeve and each hind leg sleeve may be rotated to the circumference of the medial-axis line of hind legs The hind leg movement means of communication which connects each aforementioned pars-inflexa material and each aforementioned hind leg sleeve is formed. So that rotation movement of each aforementioned **** centering on the supporting pivotably pivotably point of the above 2nd may be told to each aforementioned nose-gear sleeve and each nose-gear sleeve may be rotated to the circumference of the medial-axis line of the nose gear One pair of handrail members which are characterized by forming the nose-gear movement means of communication which connects each aforementioned **** and each aforementioned nose-gear sleeve and which are prolonged in a cross direction, each aforementioned handrail — with one pair of nose gear of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a front wheel is attached in each lower part edge each aforementioned handrail — with one pair of hind legs of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a rear wheel is attached in each lower part edge As opposed to each center section of the length direction of the one aforementioned pair of hind legs One pair of each pars-inflexa material with which an edge is connected possible [rotation] in the 1st supporting pivotably pivotably point on the other hand, each lower part edge is connected possible [rotation] to each another side edge of the one aforementioned pair of pars-inflexa material — having — and the one aforementioned pair of handrails — with one pair of pusher bars with which the predetermined position of the distance upper part is connected from each lower part edge possible [rotation] to each back edge of a member The one-pair side rod with which each front edge is connected with possible [rotation] in the 2nd supporting pivotably pivotably point to each center section of the length direction of the one aforementioned pair of nose gear, and each back edge is connected possible [rotation] to each another side edge of the one aforementioned pair of pars-inflexa material, The nose-gear connection member passed between downward positions from the supporting pivotably pivotably point of the above 2nd of the one aforementioned pair of nose gear, the hind leg connection member passed between downward positions from the supporting pivotably pivotably point of the above 1st of the one aforementioned pair of hind legs — having — a folding state — the aforementioned nose-gear connection — the folding formula baby carriage from which a crosswise size is subtracted when a member and a hind leg connection member are crooked The aforementioned hind leg connection members are one pair of hind leg sleeves attached in the circumference of the medial-axis line of hind legs possible [rotation] on each aforementioned hind leg, respectively. They are one pair of nose-gear sleeves with which it has the bendable hind leg connecting linkage which connects mutually the one aforementioned pair of hind leg sleeves, and the aforementioned nose-gear connection member is attached in the circumference of the medial-axis line of the nose gear possible [rotation] on each aforementioned nose gear, respectively. The bendable nose-gear connecting linkage which connects mutually the one aforementioned pair of nose-gear sleeves.

[Claim 2] So that it may have the following, rotation movement of each aforementioned pars-inflexa material centering on the supporting pivotably pivotably point of the above 1st may be told to each aforementioned hind leg sleeve and each hind leg sleeve may be rotated to the circumference of the medial-axis line of hind legs One pair of handrail members which are characterized by forming the hind leg movement means of communication which connects each

aforementioned **** and each aforementioned hind leg sleeve and which are prolonged in a cross direction, each aforementioned handrail — with one pair of nose gear of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a front wheel is attached in each lower part edge each aforementioned handrail — with one pair of hind legs of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a rear wheel is attached in each lower part edge As opposed to each center section of the length direction of the one aforementioned pair of hind legs One pair of each pars-inflexa material with which an edge is connected possible [rotation] in the 1st supporting pivotably pivotably point on the other hand, each lower part edge is connected possible [rotation] to each another side edge of the one aforementioned pair of pars-inflexa material — having — and the one aforementioned pair of handrails — with one pair of pusher bars with which the predetermined position of the distance upper part is connected from each lower part edge possible [rotation] to each back edge of a member The one-pair side rod with which each front edge is connected with possible [rotation] in the 2nd supporting pivotably pivotably point to each center section of the length direction of the one aforementioned pair of nose gear, and each back edge is connected possible [rotation] to each another side edge of the one aforementioned pair of pars-inflexa material, The folding formula baby carriage from which a crosswise size is subtracted when it has the hind leg connection member passed between downward positions and the aforementioned hind leg connection member is crooked in the state of folding from the supporting pivotably pivotably point of the above 1st of the one aforementioned pair of hind legs. The aforementioned hind leg connection members are one pair of hind leg sleeves attached in the circumference of the medial-axis line of hind legs possible [rotation] on each aforementioned hind leg, respectively. The bendable hind leg connecting linkage which connects mutually the one aforementioned pair of hind leg sleeves.

[Claim 3] So that it may have the following, rotation movement of each aforementioned **** centering on the supporting pivotably pivotably point of the above 2nd may be told to each aforementioned nose-gear sleeve and each nose-gear sleeve may be rotated to the circumference of the medial-axis line of the nose gear One pair of handrail members which are characterized by forming the nose-gear movement means of communication which connects each aforementioned **** and each aforementioned nose-gear sleeve and which are prolonged in a cross direction, each aforementioned handrail — with one pair of nose gear of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a front wheel is attached in each lower part edge each aforementioned handrail — with one pair of hind legs of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a rear wheel is attached in each lower part edge As opposed to each center section of the length direction of the one aforementioned pair of hind legs One pair of each reversal members with which an edge is connected possible [rotation] in the 1st supporting pivotably pivotably point on the other hand, the one aforementioned pair of reversal — each lower part edge is connected possible [rotation] to each another side edge of a member — having — and the one aforementioned pair of handrails — with one pair of pusher bars with which the predetermined position of the distance upper part is connected from each lower part edge possible [rotation] to each back edge of a member each front edge connects possible [rotation] in the 2nd supporting pivotably pivotably point to each center section of the length direction of the one aforementioned pair of nose gear — having — and the one aforementioned pair of reversal — with the one-pair side rod with which each back edge is connected possible [rotation] to each another side edge of a member The folding formula baby carriage from which a crosswise size is subtracted when it has the nose-gear connection member passed between downward positions and the aforementioned nose-gear connection member is crooked in the state of folding from the supporting pivotably pivotably point of the above 2nd of the one aforementioned pair of nose gear. The aforementioned nose-gear connection members are one pair of nose-gear sleeves attached in the circumference of the medial-axis line of the nose gear possible [rotation] on each aforementioned nose gear, respectively. The bendable nose-gear connecting linkage which

connects mutually the one aforementioned pair of nose-gear sleeves.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention is interlocked with folding operation of the member which constitutes each side of the skeleton of a baby carriage especially about the plaiting-machine style used for a folding formula baby carriage and there, and relates to the plaiting-machine style by which the member which specifies the crosswise size of a skeleton is also used for there [the folding formula baby carriage and there] it was made to be folded up there.

[0002]

[Description of the Prior Art] The fundamental structure of a folding formula baby carriage interesting for this invention is indicated by JP,57-50705,B by this applicant. Compared with the state where the folding formula baby carriage indicated by this official report was opened in the state after folding, both a cross-direction size, the height direction size, and a crosswise size are reduced, and facilities are given to carrying and storage in the state after folding.

[0003]

[Problem(s) to be Solved by the Invention] However, it folds up and there is room mentioned above to be improved further in a formula baby carriage.

[0004] Especially the problem that should be improved has lightweight-ization of a baby carriage in a difficult point. It is considered to be the cause that it has comparatively many part mark.

[0005] Thus, it is because it is required to interlock the movement of the member which specifies the crosswise size of the movement of a member and a skeleton which constitutes each side of the skeleton of a baby carriage and the mechanism for producing this linkage is comparatively complicated especially to cause increase of part mark. Even when the field which the movement of the member which constitutes each side of the skeleton of a baby carriage produces, and the field which the movement of the member which specifies the crosswise size of a skeleton produces are the same, it is not parallel, either, and it is because it must be what can perform the so-called three-dimensions-operation in order to attain linkage which was mentioned above, since it crosses mutually.

[0006] So, the purpose of this invention is the thing which used the comparatively easy plaiting-machine style of structure which can interlock the movement of the member which specifies the crosswise size of the movement of a member, and a skeleton which constitutes each side of the skeleton of a baby carriage, and such a plaiting-machine style and for which it is going to fold up and is going to offer a formula baby carriage.

[0007]

[Means for Solving the Problem] The folding formula baby carriage which should be the requisite for invention according to claim 1 one pair of handrail members prolonged in a cross direction,

and each handrail — with one pair of nose gear of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a front wheel is attached in each lower part edge each handrail — with one pair of hind legs of a member by which each upper part edge is comparatively connected respectively possible [rotation] to the front section, and a rear wheel is attached in each lower part edge As opposed to each center section of the length direction of one pair of hind legs One pair of each reversal members with which an edge is connected possible [rotation] in the 1st supporting pivotably pivotably point on the other hand, one pair of reversal — each lower part edge is connected possible [rotation] to each another side edge of a member — having — and one pair of handrails — with one pair of pusher bars with which the predetermined position of the distance upper part is connected from each lower part edge possible [rotation] to each back edge of a member each front edge connects possible [rotation] in the 2nd supporting pivotably pivotably point to each center section of the length direction of one pair of nose gear — having — and one pair of reversal — with the one-pair side rod with which each back edge is connected possible [rotation] to each another side edge of a member the nose-gear connection member passed between downward positions from the 2nd supporting pivotably pivotably point of one pair of nose gear, and the hind leg connection member passed between downward positions from the 1st supporting pivotably pivotably point of one pair of hind legs — having — a folding state — nose-gear connection — a crosswise size is reduced when a member and a hind leg connection member are crooked [0008] The feature of invention according to claim 1 is in the following points. A hind leg connection member is equipped with the bendable hind leg connecting linkage which connects mutually one pair of hind leg sleeves attached in the circumference of the medial-axis line of hind legs possible [rotation] on each hind leg, respectively, and one pair of hind leg sleeves. A nose-gear connection member is equipped with the bendable nose-gear connecting linkage which connects mutually one pair of nose-gear sleeves attached in the circumference of the medial-axis line of the nose gear possible [rotation] on each nose gear, respectively, and one pair of nose-gear sleeves.

[0009] moreover, each reversal centering on the 1st supporting pivotably pivotably point — the hind leg movement means of communication which connects each reversal member and each hind leg sleeve is formed so that rotation movement of a member may be told to each hind leg sleeve and each hind leg sleeve may be rotated to the circumference of the medial-axis line of hind legs Furthermore, the nose-gear movement means of communication which connects each **** and each nose-gear sleeve is formed so that rotation movement of each **** centering on the 2nd supporting pivotably pivotably point may be told to each nose-gear sleeve and each nose-gear sleeve may be rotated to the circumference of the medial-axis line of the nose gear.

[0010] Although both movement means of communication by the side of the nose gear and movement means of communication by the side of hind legs were observed in invention according to claim 1, only paying attention to a movement means of communication by the side of hind legs, only a movement means of communication by the side of the nose gear is observed by invention according to claim 3 by invention according to claim 2.

[0011] In the one desirable example, a nose-gear movement means of communication is equipped with the following composition. That is, the guide slot prolonged spirally is formed in each nose-gear sleeve, respectively. The guide pin accepted in guide Mizouchi is prepared in each nose gear, respectively. The side rod overhang section further jutted out from the 2nd supporting pivotably pivotably point to the front is formed in each ****, respectively. Each **** overhang section and each nose-gear sleeve of each other are connected by the nose-gear rigidity link, respectively.

[0012] Moreover, in the one desirable example, a hind leg movement means of communication is equipped with the following composition. That is, the guide slot prolonged spirally is formed in each hind leg sleeve, respectively. The guide pin accepted in guide Mizouchi is prepared in each hind leg, respectively. The pars-inflexa material overhang section jutted out from the 1st supporting pivotably pivotably point to one end further on the other hand is formed in each pars-inflexa material, respectively. Each pars-inflexa material overhang section and each hind leg sleeve of each other are connected by the hind leg rigidity link, respectively.

[0013] In this invention, if folding operation on the basis of pars-inflexa material is started, it will operate so that a nose-gear movement means of communication may make a nose-gear connection member crooked, and it will operate so that a hind leg movement means of communication may make a hind leg connection member crooked. Therefore, as for a baby carriage, a crosswise size is reduced in a folding state.

[0014] In the one desirable example, since it is formed so that a guide slot may be prolonged spirally although a guide pin moves by guide Mizouchi when a sleeve moves in the length direction of a cylindrical member, rotation is given to a sleeve. Therefore, this rotation of a sleeve produces folding operation of a connecting linkage.

[0015] In the desirable example, the operation which changes rectilinear motion into rotation is used in order to bend a nose-gear connecting linkage and a hind leg connecting linkage. Moreover, in order to carry out rectilinear motion of the sleeve, the movement of a side rod and pars-inflexa material is used, and the movement of these side rod and pars-inflexa material is given to a sleeve by a nose-gear rigidity link and the hind leg rigidity link, respectively.

[0016] thus, folding movement of the member which constitutes the side of the skeleton of a baby carriage according to this invention — rotation of a nose-gear sleeve or a hind leg sleeve — changing — it — nose-gear connection — a member or a hind leg connection member is made crooked

[0017]

[Embodiments of the Invention] A drawing is for explaining the folding formula baby carriage by one example of this invention, and the plaiting-machine style used as the feature of this invention is contained in this baby carriage. In these drawings, in order to show only the skeleton of a baby carriage and to illustrate the composition of such a skeleton intelligibly, illustration of the seat for sitting infants is omitted. A seat is usually equipped with the seat and the back reclining section.

[0018] Drawing 1 is the right lateral view showing the state where the baby carriage opened, and drawing 2 is the rear view showing the state where it similarly opened. Drawing 3 is the right lateral view showing the state where the baby carriage closed. Drawing 4 is the perspective diagram showing the principal part of the baby carriage in the state in the middle of folding operation.

[0019] the member which divides roughly this folding formula baby carriage, and constitutes each side of the skeleton of a baby carriage, and the member which constitutes each side — it has the member which is passed in between and specifies the crosswise size of a skeleton Moreover, this baby carriage has the structure of a bilateral symmetry. Therefore, it is the element contained in this baby carriage, and the same reference mark will be used about what is arranged at right and left, respectively.

[0020] First, the member which constitutes each side of a skeleton contains the following. one pair of handrails — a member 1 is arranged so that it may be prolonged in a cross direction these one pairs of handrails — it is connected with the bendable drum guard 2 between each front edge of a member 1 the drum guard 2 — desirable — a handrail — it is supposed to a member 1 that it is removable

[0021] a handrail — a member 1 is comparatively connected with the front section possible [rotation by the pivotable support pin 4] for the upper part edge of one pair of nose gear 3 A front wheel 5 is attached in the lower part edge of each nose gear 3.

[0022] each handrail — a member 1 is comparatively connected with the front section respectively possible [rotation by the pivotable support pin 4] for each upper part edge of one pair of hind legs 6 this example — a handrail — although the common pivotable support pin 4 was used in order to connect the both sides of the nose gear 3 and hind legs 6 possible [rotation] to a member 1, according to the design of a baby carriage, the nose gear and hind legs may be connected possible [rotation] by mutually different pivotable support pin to a handrail member A rear wheel 7 is attached in each lower part edge of hind legs 6.

[0023] each center section of the length direction of one pair of hind legs 6 — one pair of reversal — the one way each edge of a member 8 is connected possible [rotation] through the pivotable support pin 9 reversal — hind legs 6 are arranged including two plates so that it may

be inserted among these plates as the member 8 is well shown in drawing 4

[0024] Each lower part edge of one pair of pusher bars 10 is connected with each another side edge of one pair of pars-inflexa material 8 possible [rotation] by the pivotable support pin 11. These pusher bars 10 are also located between two plates with which each pars-inflexa material 8 is equipped. moreover, the handrail mentioned above in the predetermined position of the distance upper part from each lower part edge of a pusher bar 10 — each back edge of a member 1 is connected possible [rotation] by the pivotable support pin 12

[0025] the pusher-bar connection at this example which one pair of pusher bars 10 can bend — between the upper part-edge is mutually connected by the member 13 pusher-bar connection — a member 13 gives the grip of the hand of pushing this baby carriage moreover, pusher-bar connection — it is prepared in the center section of the member 13 so that the lock release operation button 14 may project below In order to cancel the both sides of the lock for maintaining the state where this baby carriage opened, and the lock for maintaining the state where this baby carriage closed, press operation of this lock release operation button 14 is carried out. carrying out press operation of the lock release operation button 14, although detailed illustration is omitted — pusher-bar connection — while changing into the state which a member 13 can bend, the lock block 15 it was made to interlock through a wire (not shown) to operation of this button 14 can pull up upwards along with a pusher bar 10 With the spring (not shown), the lock block 15 is energized so that it may always move below along with a pusher bar 10, as shown in drawing 1 , when it engages with the upper part edge of the pars-inflexa material 8, fixes mutually a pusher bar 10 and the pars-inflexa material 8, and locks the state where the baby carriage opened. On the other hand, after the baby carriage has closed, as shown in drawing 3 , the lock block 15 engages with the center section of the length direction of the pars-inflexa material 8, fixes mutually a pusher bar 10 and the pars-inflexa material 8, and locks the state where the baby carriage closed.

[0026] Each front edge of the one-pair side rod 16 is connected with each center section of the length direction of one pair of nose gear 3 possible [rotation]. Piece 17 is fixed to the front edge of the side rod 16, and the pivotable support pin 18 is attached in it so that the both sides of this end piece 17 and the nose gear 3 may be penetrated as well shown in drawing 4 for this connection. Moreover, each back edge of the side rod 16 is connected with the edge of the pars-inflexa material 8 mentioned above possible [rotation]. In this example, in order to use the pivotable support pin 11 which connects the pusher bar 10 mentioned above for such connection, and the pars-inflexa material 8 and to absorb the difference of the height of the back edge of the side rod 16, and the pivotable support pin 11, piece 19 is attached in the back edge of the side rod 16. The one-pair side rod 16 is used in order to hold the seat of the seat of this baby carriage.

[0027] Next, the member which specifies the crosswise size of the skeleton of this baby carriage contains the following.

[0028] the pivotable support pin 18 of one pair of nose gear 3 — between downward positions — nose-gear connection — a member 20 is passed

[0029] the pivotable support pin 9 of one pair of hind legs 6 — between downward positions — hind leg connection — a member 21 is passed

[0030] furthermore — this example — the one-pair side rod 16 — comparatively — between the front sections — side rod connection — a member 22 is passed

[0031] in addition, the pusher-bar connection mentioned above — a member 13 can also be regarded as the member which specifies the crosswise size of such a skeleton

[0032] drawing 4 is shown especially well — as — nose-gear connection — a member 20 is equipped with the bendable nose-gear connecting linkage 24 which connects mutually one pair of nose-gear sleeves 23 attached, respectively possible [a slide] on each nose gear 3, and possible [the rotation to the circumference of the medial-axis line of the nose gear 3], and one pair of nose-gear sleeves 23 The nose-gear connecting linkage 24 has two folding points 25 in this example, and the both ends of the nose-gear connecting linkage 24 are being fixed to the nose-gear sleeve 23, respectively.

[0033] In addition, in this example, since it consists of pipes of a cross-section round shape, if

the nose gear 3 arranges the nose-gear sleeve 23 directly on such nose gear 3, it can make such a nose-gear sleeve 23 the state which can be rotated to the circumference of the medial-axis line of the nose gear 3. Since hind legs 6 and the side rod 16 also consist of pipes of a cross-section round shape, they can do so the same advantage as the case of the nose gear 3, so that it may mention later. in addition, the nose gear 3 — all — a cross section — the portion in which the nose-gear sleeve 23 is located, without being circular — a cross section — making it circular **** — such — a cross section — in order to make it circular, you may arrange another member by which the cross section of a peripheral face was made circular on the nose gear 3. This can say also about the hind legs 6 mentioned later and the side rod 16.

[0034] The guide slot 26 prolonged spirally is formed in each nose-gear sleeve 23, respectively. Moreover, the guide pin 27 accepted in this guide slot 26 is formed in each nose gear 3, respectively.

[0035] The development of the nose-gear sleeve 23 is shown in drawing 5. In this example, on the other hand, the rotation prohibition section 28 of the guide slot 26 prolonged in the direction of an axis of the nose-gear sleeve 23 and parallel in an edge is given as well shown in drawing 5.

[0036] The side rod overhang section 29 further jutted out from the pivotable support pin 18 to the front is formed in each **** 16, respectively. In this example, the side rod overhang section 29 is formed in one with the end piece 17.

[0037] Each **** overhang section 29 and the nose-gear sleeve 23 of each other are connected by the nose-gear rigidity link 30, respectively. This nose-gear rigidity link 30 and the nose-gear sleeve 23 are preferably connected in a kind of universal-joint mode so that rotation of the nose-gear sleeve 23 may be permitted.

[0038] the nose-gear connection described above — the composition relevant to a member 20 — substantial — the same composition — hind leg connection — it is adopted also as a member 21

[0039] hind leg connection — a member 21 is equipped with the bendable hind leg connecting linkage 32 which connects mutually one pair of hind leg sleeves 31 attached, respectively possible [a slide] on each hind leg 6, and possible [the rotation to the circumference of the medial-axis line of hind legs 6], and one pair of hind leg sleeves 31. The hind leg connecting linkage 32 is equipped with two folding points 33, and the ends of the hind leg connecting linkage 32 are being fixed to the hind leg sleeve 31, respectively.

[0040] The guide slot 34 prolonged spirally is formed in each hind leg sleeve 31, respectively. Moreover, the guide pin 35 accepted in the guide slot 34 is formed in each hind leg 6, respectively.

[0041] The rotation prohibition section 36 is also given to this guide slot 34 at the one side edge as well as the guide slot 26.

[0042] The pars-inflexa material overhang section 37 further jutted out from the pivotable support pin 9 to an edge side is formed in each pars-inflexa material 8, respectively.

[0043] Each pars-inflexa material overhang section 37 and each hind leg sleeve 31 of each other are connected by the hind leg rigidity link 38, respectively. Preferably, the hind leg rigidity link 38 and the hind leg sleeve 31 are connected in a kind of universal-joint mode so that rotation of the hind leg sleeve 31 may be permitted.

[0044] side rod connection — a member 22 is equipped with the bendable side rod connecting linkage 40 which connects the one-pair side rod sleeve 39 attached, respectively possible [a slide] on each **** 16, and possible [the rotation to the circumference of the medial-axis line of the side rod 16], and these one-pair side rod sleeve 39 of each other. The side rod connecting linkage 40 has two folding points 41 in this example, and the ends of the side rod connecting linkage 40 are being fixed to the side rod sleeve 39, respectively.

[0045] The guide slot 42 prolonged spirally is formed in each **** sleeve 39, respectively. Moreover, the guide pin 43 accepted in the guide slot 42 is formed in each **** 16, respectively.

[0046] The development of the side rod sleeve 39 is shown in drawing 6. The piece 44 of starting jutted out to the side is formed in each **** sleeve 39, respectively. This piece 44 of starting contacts the nose gear 3 in the early stage which shifts to the state where it closed

from the state where the baby carriage opened, and the force for making the side rod sleeve 39 slide on the side rod 16 by this is given from the nose gear 3.

[0047] Next, operation of a folding formula baby carriage which mainly explained composition is explained above.

[0048] first — if it is in the member which constitutes each side of a skeleton after the baby carriage shown in drawing 1 and drawing 2 has opened — reversal — it is rotating so that a member 8 may meet the Johan section of hind legs 6, therefore the pusher bar 10 is relatively brought to the upper position this state — the lock block 15 — a pusher bar 10 and reversal — relative movement with a member 8 forbids — having — **** — therefore, these pusher bars 10 and reversal — a member 8 and a handrail — the fixed triangle is formed of a member 1 and hind legs 6 Moreover, another triangle is formed with the nose gear 3, hind legs 6, and the side rod 16. The state where the baby carriage opened is maintained from these things. If it is in the member which specifies the crosswise size of a skeleton at this time, each movement is forbidden with fixation of the member which constitutes each side mentioned above. Especially, since guide pins 27 and 35 are located in the rotation prohibition sections 28 and 36 of the guide slots 26 and 34 in each of the nose-gear sleeve 23 and the hind leg sleeve 31, respectively, you should also note that these nose-gear sleeve 23 and the hind leg sleeve 31 are in the state where it cannot rotate to the circumference of the medial-axis line of the nose gear 3 and hind legs 6, respectively. Folding of the nose-gear connecting linkage 24 and the hind leg connecting linkage 32 can be more firmly forbidden by this.

[0049] In order to make the folding formula baby carriage in such a state where it opened into the folded-up state, i.e., the state where it closed, press operation of the lock release operation button 14 is carried out first. by this, the lock block 15 carries out a variation rate upwards along with a pusher bar 10 — having — reversal — engagement to a member 8 is solved

[0050] next — while carrying out press operation of the lock release operation button 14 — pusher-bar connection — bringing near a hand with a member 13 back and attaching a rear wheel 7 to the ground, this baby carriage is back leaned so that a front wheel 5 may be floated in inside this — pusher-bar connection — while a member 13 bends — reversal — a member 8 rotates in the arrow 45 direction reversal — the state where the rotation to such arrow 45 direction of a member 8 progressed to some extent is shown in drawing 4

[0051] reversal — rotation which the member 8 mentioned above — responding — reversal — a member — the hind leg rigidity link 38 connected with the overhang section 37 pulls up the hind leg sleeve 31 upwards along with hind legs 6, as an arrow 46 shows Although a guide pin 35 moves in the guide slot 34 according to this, since it is formed so that the guide slot 34 may be prolonged spirally, the hind leg sleeve 31 is rotated by arrow 47 direction. The hind leg connecting linkage 32 is bent through the folding point 33 by this.

[0052] the reversal mentioned above — the rotation to the arrow 45 direction of a member 8 is transmitted also to the nose gear 3 through the side rod 16, and the nose gear 3 can draw it near toward hind legs 6

[0053] At this time, the side rod 16 rotates in the arrow 48 direction to the nose gear 3. Therefore, the nose-gear rigidity link 30 connected with the side rod overhang section 29 pulls up the nose-gear sleeve 23 along with the nose gear 3, as an arrow 49 shows. Although a guide pin 27 moves in the guide slot 26 at this time, since it is formed so that the guide slot 26 may be prolonged spirally, the nose-gear sleeve 23 is rotated by arrow 50 direction. The nose-gear connecting linkage 24 is bent through the folding point 25 by this.

[0054] On the other hand, the nose gear 3 gives the force of making this sliding in the arrow 51 direction along with the side rod 16, to the side rod sleeve 39 through the piece 44 of starting as a result of rotation in the arrow 48 direction to the nose gear 3 of the side rod 16 mentioned above. Although a guide pin 43 moves in the guide slot 42 at this time, since it is formed so that the guide slot 42 may be prolonged spirally, rotation of arrow 52 direction is given to the side rod sleeve 39. The side rod connecting linkage 40 is bent through the folding point 41 by this.

[0055] Operation which was mentioned above advances further and, finally is made into the closed state where it is shown in drawing 3. In this state, the lock block 15 engages with another portion of the pars-inflexa material 8 again, and this state where it closed is maintained by this.

In this state where it closed, since a front wheel 5 and a rear wheel 7 align at a cross direction, this baby carriage can become independent. In addition, the pusher-bar connection shown in drawing 3 — this baby carriage is folded up about the cross direction by even the grade which the front wheel 5 on either side and the rear wheel 7 on either side contact mostly, respectively so that the state of a member 13, the nose-gear connecting linkage 24, the hind leg connecting linkage 32, and the side rod connecting linkage 40 may show

[0056] On the contrary, what is necessary is just to follow above-mentioned operation conversely fundamentally, in order to change into the state which showed in drawing 1 and drawing 2 from the closed state shown in drawing 3. In the middle, the state which shows in drawing 4 is passed like the case where it mentions above.

[0057] As mentioned above, although this invention was explained about the illustrated desirable example, some modifications are also possible within the limits of this invention. Therefore, elements other than the requirements for composition indispensable for this invention are also contained in the example mentioned above.

[0058] for example, side rod connection — although this was equipped with the side rod sleeve 39 and the side rod connecting linkage 40 about the member 22 — side rod connection — if the member equivalent to a member 22 is automatically bent by mutual proximity of the one-pair side rod 16, it does not need to be equipped with composition like the side rod sleeve 39 and the side rod connecting linkage 40 like the example mentioned above

[0059] moreover, side rod connection — although a member 22 raises the intensity in the state where the baby carriage opened, it does not desire such an advantage — if it becomes — side rod connection — the member 22 does not need to be formed

[0060] moreover, pusher-bar connection — the same is said of a member 13 namely, pusher-bar connection — although a member 13 raises the intensity in the state where the baby carriage opened, it does not desire such an advantage — it does not need to be prepared if it becomes in addition, pusher-bar connection — what is necessary is just to use the member connected crosswise in other portions of such a baby carriage, when the intensity in the state where the baby carriage opened runs short, since the member 13 is not formed It can also use in order to raise the intensity in the state where the baby carriage opened the member prolonged crosswise [at this time, for example, the back reclining section of the seat of a baby carriage,].

[0061] Members 20, 21, and 22 are included. moreover, connection equipped with sleeves 23, 31, and 39 and connecting linkages 24, 32, and 40 which were mentioned above — The guide slots 26, 34, and 42 are formed in sleeves 23, 31, and 39. Using for other portions of a folding formula baby carriage can also use the plaiting-machine style by which guide pins 27, 35, and 43 were formed in a cylindrical member like the nose gear 3, hind legs 6, and the side rod 16 also for folding formula baby carriages other than the illustrated form.

[Translation done.]

* NOTICES *

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the right lateral view showing the state where the folding formula baby carriage by one example of this invention opened.

[Drawing 2] It is the rear view of the baby carriage shown in drawing 1.

[Drawing 3] It is the right lateral view showing the state where the baby carriage shown in drawing 1 closed.

[Drawing 4] It is the perspective diagram showing the state in the middle of folding operation of the baby carriage shown in drawing 1.

[Drawing 5] It is the development of the nose-gear sleeve 23.

[Drawing 6] It is the development of the side rod sleeve 39.

[Description of Notations]

1 Handrail — Member

3 Nose Gear

4 Pivotal Support Pin

5 Front Wheel

6 Hind Legs

7 Rear Wheel

8 Reversal — Member

9 Pivotal Support Pin (1st Supporting Pivotal Point)

10 Pusher Bar

11 12 Pivotal support pin

16 Side Rod

18 Pivotal Support Pin (2nd Supporting Pivotal Point)

20 Nose-Gear Connection — Member

21 Hind Leg Connection — Member

23 Nose-Gear Sleeve

24 Nose-Gear Connecting Linkage

25 Folding Point

26 Guide Slot

27 Guide Pin

29 Side Rod Overhang Section

30 Nose-Gear Rigidity Link

31 Hind Leg Sleeve

32 Hind Leg Connecting Linkage

33 Folding Point

34 Guide Slot

35 Guide Pin

37 Reversal — Member — Overhang Section

38 Hind Leg Rigidity Link

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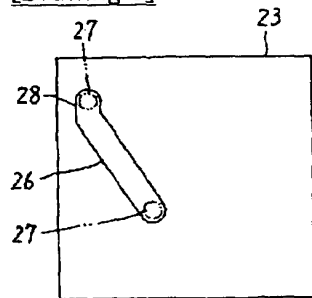
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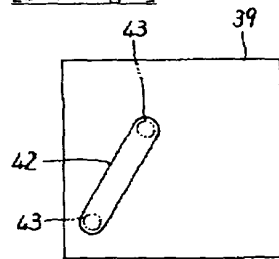
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DRAWINGS

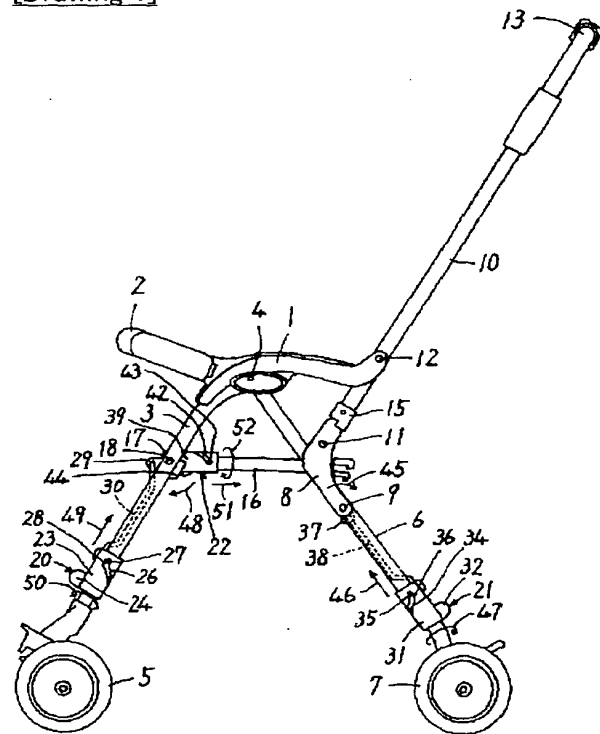
[Drawing 5]



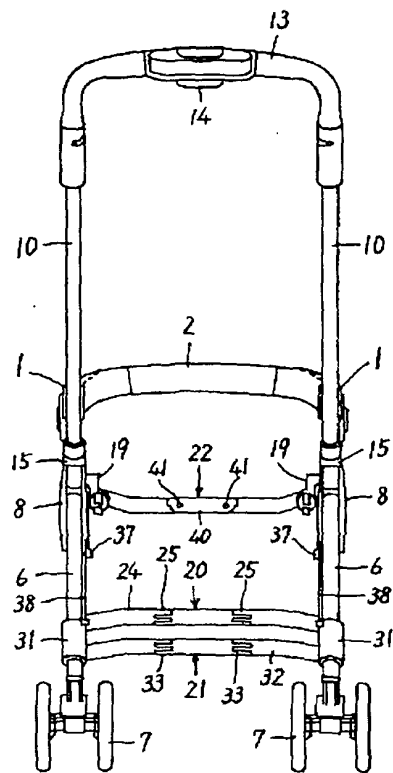
[Drawing 6]



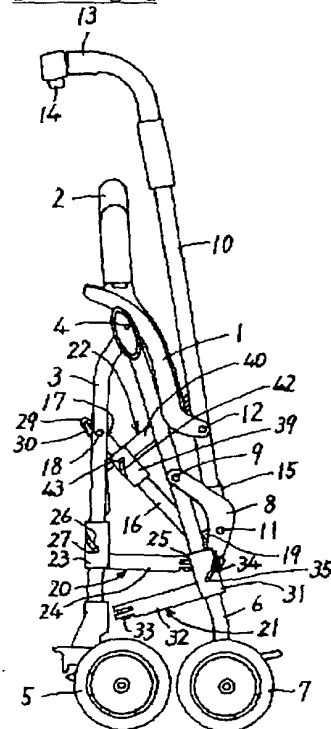
[Drawing 1]



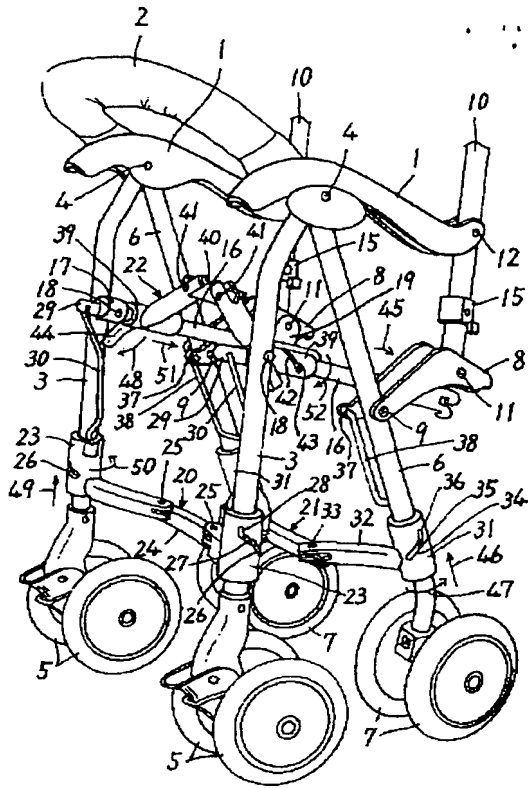
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]

AA

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平10-35507

(43) 公開日 平成10年(1998) 2月10日

(51) Int.Cl.⁸

B 6 2 B 7/08

識別記号

庁内整理番号

F I

B 6 2 B 7/08

技術表示箇所

審査請求 有 請求項の数 3 O L (全 8 頁)

(21) 出願番号 特願平9-111175
(62) 分割の表示 特願平3-2315の分割
(22) 出願日 平成3年(1991) 1月11日

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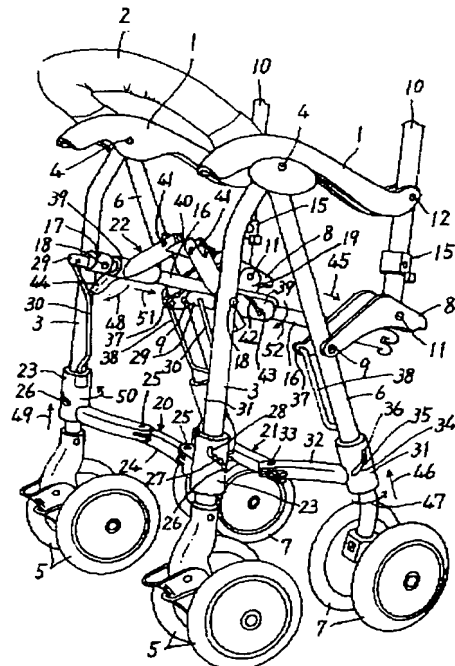
USPS EXPRESS MAIL
EV 338 198 354 US
AUGUST 19 2003

(54) 【発明の名称】 折りたたみ式乳母車

(57) 【要約】

【課題】 折りたたみ式乳母車の骨組の各側面を構成する部材の動きに連動して、骨組の幅方向寸法を規定する部材の折曲げを可能にする。

【解決手段】 前脚3に対する側棒16の矢印48方向の回転によって、前脚剛性リンク30を介して前脚スリーブ23が矢印49方向に引き上げられる。このとき、前脚スリーブ23に形成されたガイド溝26内で前脚3に設けられたガイドピン27が移動するが、ガイド溝26が螺旋状に延びているので、前脚スリーブ23は、矢印50方向に回転させられる。したがって、1対の前脚スリーブ23間に渡された前脚連結リンク24が折曲げ点25を介して折曲げられる。同様の構成が、1対の後脚6間に渡される後脚連結部材21および1対の側棒16間に渡される側棒連結部材22においても採用される。



【特許請求の範囲】

【請求項1】 前後方向に延びる1対の手摺部材と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に前輪が取付けられる1対の前脚と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に後輪が取付けられる1対の後脚と、
 前記1対の後脚の長さ方向の各中央部に対して各々の一方端が第1の枢支点において回動可能に連結される1対の反転部材と、
 前記1対の反転部材の各他方端に対して各々の下方端が回動可能に連結され、かつ前記1対の手摺部材の各後方端に対して各々の下方端から所定の距離上方の位置が回動可能に連結される1対の押棒と、
 前記1対の前脚の長さ方向の各中央部に対して各々の前方端が第2の枢支点において回動可能に連結され、かつ前記1対の反転部材の各他方端に対して各々の後方端が回動可能に連結される1対の側棒と、
 前記1対の前脚の前記第2の枢支点より下方の位置間に渡される前脚連結部材と、
 前記1対の後脚の前記第1の枢支点より下方の位置間に渡される後脚連結部材とを備え、折りたたみ状態では前記前脚連結部材および後脚連結部材が屈曲することによって幅方向寸法が減じられる折りたたみ式乳母車において、
 前記後脚連結部材は、前記各後脚上で後脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の後脚スリーブと、前記1対の後脚スリーブを互いに連結する折曲げ可能な後脚連結リンクとを備え、
 前記前脚連結部材は、前記各前脚上で前脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の前脚スリーブと、前記1対の前脚スリーブを互いに連結する折曲げ可能な前脚連結リンクとを備え、
 前記第1の枢支点を中心とする前記各反転部材の回動運動を前記各後脚スリーブに伝えて各後脚スリーブを後脚の中心軸線周りに回動させるように、前記各反転部材と前記各後脚スリーブとを連結する後脚運動伝達手段が設けられ、
 前記第2の枢支点を中心とする前記各側棒の回動運動を前記各前脚スリーブに伝えて各前脚スリーブを前脚の中心軸線周りに回動させるように、前記各側棒と前記各前脚スリーブとを連結する前脚運動伝達手段が設けられることを特徴とする、折りたたみ式乳母車。

【請求項2】 前後方向に延びる1対の手摺部材と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に前輪が取付けられる1対の前脚と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に後輪

が取付けられる1対の後脚と、
 前記1対の後脚の長さ方向の各中央部に対して各々の一方端が第1の枢支点において回動可能に連結される1対の反転部材と、
 前記1対の反転部材の各他方端に対して各々の下方端が回動可能に連結され、かつ前記1対の手摺部材の各後方端に対して各々の下方端から所定の距離上方の位置が回動可能に連結される1対の押棒と、
 前記1対の前脚の長さ方向の各中央部に対して各々の前方端が第2の枢支点において回動可能に連結され、かつ前記1対の反転部材の各他方端に対して各々の後方端が回動可能に連結される1対の側棒と、
 前記1対の後脚の前記第1の枢支点より下方の位置間に渡される後脚連結部材とを備え、折りたたみ状態では前記後脚連結部材が屈曲することによって幅方向寸法が減じられる折りたたみ式乳母車において、
 前記後脚連結部材は、前記各後脚上で後脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の後脚スリーブと、前記1対の後脚スリーブを互いに連結する折曲げ可能な後脚連結リンクとを備え、
 前記第1の枢支点を中心とする前記各反転部材の回動運動を前記各後脚スリーブに伝えて各後脚スリーブを後脚の中心軸線周りに回動させるように、前記各側棒と前記各後脚スリーブとを連結する後脚運動伝達手段が設けられることを特徴とする、折りたたみ式乳母車。

【請求項3】 前後方向に延びる1対の手摺部材と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に前輪が取付けられる1対の前脚と、
 前記各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に後輪が取付けられる1対の後脚と、
 前記1対の後脚の長さ方向の各中央部に対して各々の一方端が第1の枢支点において回動可能に連結される1対の反転部材と、
 前記1対の反転部材の各他方端に対して各々の下方端が回動可能に連結され、かつ前記1対の手摺部材の各後方端に対して各々の下方端から所定の距離上方の位置が回動可能に連結される1対の押棒と、
 前記1対の前脚の長さ方向の各中央部に対して各々の前方端が第2の枢支点において回動可能に連結され、かつ前記1対の反転部材の各他方端に対して各々の後方端が回動可能に連結される1対の側棒と、
 前記1対の前脚の前記第2の枢支点より下方の位置間に渡される前脚連結部材と、を備え、折りたたみ状態では前記前脚連結部材が屈曲することによって幅方向寸法が減じられる折りたたみ式乳母車において、
 前記前脚連結部材は、前記各前脚上で前脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の前脚スリーブと、前記1対の前脚スリーブを互いに連結する折曲

げ可能な前脚連結リンクとを備え、

前記第2の枢支点を中心とする前記各側棒の回動運動を前記各前脚スリーブに伝えて各前脚スリーブを前脚の中心軸線周りに回動させるように、前記各側棒と前記各前脚スリーブとを連結する前脚運動伝達手段が設けられることを特徴とする、折りたたみ式乳母車。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、折りたたみ式乳母車およびそこに用いられる折りたたみ機構に関するもので、特に、乳母車の骨組の各側面を構成する部材の折りたたみ動作に連動して、骨組の幅方向寸法を規定する部材も折りたたまれるようにされた、折りたたみ式乳母車およびそこに用いられる折りたたみ機構に関するものである。

【0002】

【従来の技術】この発明にとって興味ある折りたたみ式乳母車の基本的構造については、本件出願人による特公昭57-50705号公報に記載されている。この公報に開示される折りたたみ式乳母車は、折りたたみ後の状態において、開いた状態に比べて、前後方向寸法、高さ方向寸法および幅方向寸法がともに減じられ、折りたたみ後の状態での持ち運びおよび保管に対して便宜が図られている。

【0003】

【発明が解決しようとする課題】しかしながら、上述した折りたたみ式乳母車には、さらに改良されるべき余地がある。

【0004】特に改善されるべき問題は、乳母車の軽量化が困難である点にある。それは、部品点数が比較的多いことが原因と考えられる。

【0005】このように部品点数の増大を招くのは、特に、乳母車の骨組の各側面を構成する部材の動きと骨組の幅方向寸法を規定する部材の動きとを連動させることが必要であり、この連動を生じさせるための機構が比較複雑であるためである。なぜなら、乳母車の骨組の各側面を構成する部材の動きが生じる面と、骨組の幅方向寸法を規定する部材の動きが生じる面とは、同一でも平行でもなく、互いに交差しているため、上述したような連動を達成するには、いわゆる三次元的な動作を行なえるものでなければならないからである。

【0006】それゆえに、この発明の目的は、乳母車の骨組の各側面を構成する部材の動きと骨組の幅方向寸法を規定する部材の動きとを連動させることができる、比較的簡単な構造の折りたたみ機構、およびこのような折りたたみ機構を用いた折りたたみ式乳母車を提供しようとするところである。

【0007】

【課題を解決するための手段】請求項1に記載の発明の前提となるべき折りたたみ式乳母車は、前後方向に延び

る1対の手摺部材と、各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に前輪が取付けられる1対の前脚と、各手摺部材の比較的前方部に対して各々の上方端がそれぞれ回動可能に連結され、かつ各々の下方端に後輪が取付けられる1対の後脚と、1対の後脚の長さ方向の各中央部に対して各々の一方端が第1の枢支点において回動可能に連結される1対の反転部材と、1対の反転部材の各他方端に対して各々の下方端が回動可能に連結され、かつ1対の手摺部材の各後方端に対して各々の下方端から所定の距離上方の位置が回動可能に連結される1対の押棒と、1対の前脚の長さ方向の各中央部に対して各々の前方端が第2の枢支点において回動可能に連結され、かつ1対の反転部材の各他方端に対して各々の後方端が回動可能に連結される1対の側棒と、1対の前脚の第2の枢支点より下方の位置間に渡される前脚連結部材と、1対の後脚の第1の枢支点より下方の位置間に渡される後脚連結部材とを備え、折りたたみ状態では前脚連結部材および後脚連結部材が屈曲することによって幅方向寸法が減じられる。

【0008】請求項1に記載の発明の特徴は、以下の点にある。後脚連結部材は、各後脚上で後脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の後脚スリーブと、1対の後脚スリーブを互いに連結する折曲げ可能な後脚連結リンクとを備える。前脚連結部材は、各前脚上で前脚の中心軸線まわりに回動可能にそれぞれ取付けられる1対の前脚スリーブと、1対の前脚スリーブを互いに連結する折曲げ可能な前脚連結リンクとを備える。

【0009】また、第1の枢支点を中心とする各反転部材の回動運動を各後脚スリーブに伝えて各後脚スリーブを後脚の中心軸線周りに回動させるように、各反転部材と各後脚スリーブとを連結する後脚運動伝達手段が設けられる。さらに、第2の枢支点を中心とする各側棒の回動運動を各前脚スリーブに伝えて各前脚スリーブを前脚の中心軸線周りに回動させるように、各側棒と各前脚スリーブとを連結する前脚運動伝達手段が設けられる。

【0010】請求項1に記載の発明では、前脚側の運動伝達手段と後脚側の運動伝達手段の両者に注目したが、請求項2に記載の発明では、後脚側の運動伝達手段だけに注目し、請求項3に記載の発明では、前脚側の運動伝達手段だけに注目している。

【0011】1つの好ましい実施例では、前脚運動伝達手段は、次のような構成を備える。すなわち、各前脚スリーブには、螺旋状に延びるガイド溝がそれぞれ形成される。各前脚には、ガイド溝内に受入れられるガイドピンがそれぞれ設けられる。各側棒には、第2の枢支点よりさらに前方へ張出す側棒張出部がそれぞれ形成される。各側棒張出部と各前脚スリーブとは、それぞれ、前脚剛性リンクによって互いに連結される。

【0012】また、1つの好ましい実施例では、後脚運動伝達手段は、次のような構成を備える。すなわち、各後脚スリーブには、螺旋状に延びるガイド溝がそれぞれ形成される。各後脚には、ガイド溝内に受入れられるガイドピンがそれぞれ設けられる。各反転部材には、第1の枢支点よりさらに一方端側へ突出する反転部材突出部がそれぞれ形成される。各反転部材突出部と各後脚スリーブとは、それぞれ、後脚剛性リンクによって互いに連結される。

【0013】この発明では、反転部材を起点とする折曲げ動作が開始されれば、前脚運動伝達手段が前脚連結部材を屈曲させるように動作し、後脚運動伝達手段が後脚連結部材を屈曲させるように動作する。したがって、乳母車は、折りたたみ状態においては幅方向寸法が減じられる。

【0014】1つの好ましい実施例では、スリーブが棒状部材の長さ方向に移動したとき、ガイドピンがガイド溝内で移動するが、ガイド溝が螺旋状に延びるように形成されているので、スリーブに対して回転運動が与えられる。したがって、スリーブのこの回転運動が、連結リンクの折曲げ動作を生じさせる。

【0015】好ましい実施例では、直線運動を回転運動に変換する作用は、前脚連結リンクおよび後脚連結リンクを折曲げるために用いられる。また、スリーブを直線運動させるために、側棒および反転部材の動きが用いられ、これら側棒および反転部材の動きは、前脚剛性リンクおよび後脚剛性リンクによって、それぞれ、スリーブに与えられる。

【0016】このように、この発明によれば、乳母車の骨組の側面を構成する部材の折りたたみ運動を前脚スリーブまたは後脚スリーブの回転運動に変換し、それによって前脚連結部材または後脚連結部材を屈曲させるものである。

【0017】

【発明の実施の形態】図面は、この発明の一実施例による折りたたみ式乳母車を説明するためのもので、この乳母車には、この発明の特徴となる折りたたみ機構が含まれている。これらの図面では、乳母車の骨組のみが示されていて、このような骨組の構成をわかりやすく図示するために、乳幼児を座らせるための座席の図示が省略されている。座席は、通常、座部および背もたれ部を備える。

【0018】図1は、乳母車の開いた状態を示す右側面図であり、図2は、同じく開いた状態を示す背面図である。図3は、乳母車の閉じた状態を示す右側面図である。図4は、折りたたみ動作の途中の状態にある乳母車の主要部を示す斜視図である。

【0019】この折りたたみ式乳母車は、大別して、乳母車の骨組の各側面を構成する部材と、各側面を構成する部材間に渡され骨組の幅方向寸法を規定する部材とを

備える。また、この乳母車は、左右対称の構造を有している。したがって、この乳母車に含まれる要素であって、左右にそれぞれ配置されるものについては、同様の参照符号を用いることにする。

【0020】まず、骨組の各側面を構成する部材は、次のようなものを含む。1対の手摺部材1が、前後方向に延びるように配置される。これら1対の手摺部材1の各前方端間は、折曲げ可能な胴ガード2によって連結される。胴ガード2は、好ましくは、手摺部材1に対して着脱可能とされる。

【0021】手摺部材1の比較的前方部には、1対の前脚3の上方端が、枢支ピン4によって回転可能に連結される。各前脚3の下方端には、前輪5が取付けられる。

【0022】各手摺部材1の比較的前方部には、また、1対の後脚6の各々の上方端が、それぞれ、枢支ピン4によって回転可能に連結される。この実施例では、手摺部材1に対して、前脚3および後脚6の双方を回転可能に連結するため、共通の枢支ピン4を用いたが、乳母車の設計に応じて、前脚および後脚が、手摺部材に対して互いに異なる枢支ピンによって回転可能に連結されてもよい。後脚6の各々の下方端には、後輪7が取付けられる。

【0023】1対の後脚6の長さ方向の各中央部には1対の反転部材8の各一方端が、枢支ピン9を介して回転可能に連結される。反転部材8は、図4によく示されているように、2枚のプレートを含み、これらプレート間に挟まれるように、後脚6が配置される。

【0024】1対の反転部材8の各他方端には、1対の押棒10の各下方端が、枢支ピン11によって回転可能に連結される。これら押棒10も、各反転部材8に備える2枚のプレート間に位置される。また、押棒10の各々の下方端から所定の距離上方の位置には、前述した手摺部材1の各後方端が、枢支ピン12によって回転可能に連結される。

【0025】1対の押棒10は、この実施例では、折曲げ可能な押棒連結部材13によって、その上方端間が互いに連結される。押棒連結部材13は、この乳母車を押す手の握りを与える。また、押棒連結部材13の中央部には、ロック解除操作ボタン14が下方へ突出するように設けられている。このロック解除操作ボタン14は、この乳母車の開いた状態を維持するためのロックと、この乳母車の閉じた状態を維持するためのロックとの双方を解除するために押圧操作されるものである。詳細な図示を省略するが、ロック解除操作ボタン14を押圧操作することにより、押棒連結部材13が折曲げ可能な状態にされるとともに、このボタン14の操作に対してワイヤ（図示せず）を介して連動するようにされたロックブロック15が、押棒10に沿って上方へ引き上げられる。ロックブロック15は、ばね（図示せず）により、押棒10に沿って常に下方へ移動するように付勢されて

おり、図1に示すように、反転部材8の上方端に係合したとき、押棒10と反転部材8とを互いに固定し、乳母車の開いた状態をロックする。他方、乳母車の閉じた状態では、図3に示すように、ロックブロック15が反転部材8の長さ方向の中央部に係合し、押棒10と反転部材8とを互いに固定し、乳母車の閉じた状態をロックする。

【0026】1対の前脚3の長さ方向の各中央部には、1対の側棒16の各前前端が回動可能に連結される。この連結のために、図4によく示されているように、側棒16の前前端には、エンドピース17が固定され、このエンドピース17および前脚3の双方を貫通するように枢支ピン18が取付けられる。また、側棒16の各々の後方端は、前述した反転部材8の端部に回動可能に連結される。この実施例では、このような連結のために、前述した押棒10と反転部材8とを連結する枢支ピン11が用いられ、側棒16の後方端と枢支ピン11との高さの差を吸収するため、側棒16の後方端には、エンドピース19が取付けられる。1対の側棒16は、この乳母車の座席の座部を保持するために用いられる。

【0027】次に、この乳母車の骨組の幅方向寸法を規定する部材は、次のようなものを含んでいる。

【0028】1対の前脚3の枢支ピン18より下方の位置間には、前脚連結部材20が渡される。

【0029】1対の後脚6の枢支ピン9より下方の位置間には、後脚連結部材21が渡される。

【0030】さらに、この実施例では、1対の側棒16の比較的前方部間には、側棒連結部材22が渡される。

【0031】なお、前述した押棒連結部材13も、このような骨組の幅方向寸法を規定する部材と見ることができる。

【0032】図4において特に示されているように、前脚連結部材20は、各前脚3上でスライド可能かつ前脚3の中心軸線まわりに回動可能にそれぞれ取付けられる、1対の前脚スリーブ23と、1対の前脚スリーブ23を互いに連結する、折曲げ可能な前脚連結リンク24とを備える。前脚連結リンク24は、この実施例では、2つの折曲げ点25を有しており、前脚連結リンク24の両端部は、それぞれ、前脚スリーブ23に固定されている。

【0033】なお、この実施例では、前脚3が、断面円形のパイプから構成されているので、このような前脚3上に、直接、前脚スリーブ23を配置すれば、このような前脚スリーブ23を、前脚3の中心軸線まわりに回動可能な状態とすることができる。後述するように、後脚6および側棒16も、断面円形のパイプから構成されているので、前脚3の場合と同様の利点を奏することができる。なお、前脚3を、すべて断面円形とすることなく、前脚スリーブ23が位置する部分だけ断面円形にしたり、あるいは、このように断面円形にするため、外周

面の断面が円形とされた別の部材を前脚3上に配置してもよい。このことは、後述する後脚6および側棒16についてもいえる。

【0034】各前脚スリーブ23には、螺旋状に延びるガイド溝26がそれぞれ形成される。また、各前脚3には、このガイド溝26内に受入れられるガイドピン27がそれぞれ設けられる。

【0035】図5には、前脚スリーブ23の展開図が示されている。この実施例では、図5によく示されているように、ガイド溝26の一方端には、前脚スリーブ23の軸線方向と平行に延びる回転禁止部28が与えられる。

【0036】各側棒16には、枢支ピン18よりさらに前方へ張出す側棒張出部29がそれぞれ形成される。この実施例では、側棒張出部29は、エンドピース17と一体的に形成される。

【0037】各側棒張出部29と前脚スリーブ23とは、それぞれ、前脚剛性リンク30によって互いに連結される。この前脚剛性リンク30と前脚スリーブ23とは、前脚スリーブ23の回動を許容するように、好ましくは、一種の自在継手態様で連結される。

【0038】以上述べた前脚連結部材20に関連する構成と実質的に同じ構成が、後脚連結部材21にも採用される。

【0039】後脚連結部材21は、各後脚6上でスライド可能かつ後脚6の中心軸線まわりに回動可能にそれぞれ取付けられる、1対の後脚スリーブ31と、1対の後脚スリーブ31を互いに連結する、折曲げ可能な後脚連結リンク32とを備える。後脚連結リンク32は、2つの折曲げ点33を備え、後脚連結リンク32の両端は、それぞれ、後脚スリーブ31に固定されている。

【0040】各後脚スリーブ31には、螺旋状に延びるガイド溝34がそれぞれ形成される。また、各後脚6には、ガイド溝34内に受入れられるガイドピン35がそれぞれ設けられる。

【0041】このガイド溝34にも、ガイド溝26と同様、その一方端に回転禁止部36が与えられる。

【0042】各反転部材8には、枢支ピン9よりさらに端部側へ張出す反転部材張出部37がそれぞれ形成される。

【0043】各反転部材張出部37と各後脚スリーブ31とは、それぞれ、後脚剛性リンク38によって互いに連結される。好ましくは、後脚剛性リンク38と後脚スリーブ31とは、後脚スリーブ31の回動を許容するように、一種の自在継手態様で連結される。

【0044】側棒連結部材22は、各側棒16上でスライド可能かつ側棒16の中心軸線まわりに回動可能にそれぞれ取付けられる、1対の側棒スリーブ39と、これら1対の側棒スリーブ39を互いに連結する、折曲げ可能な側棒連結リンク40とを備える。側棒連結リンク4

0は、この実施例では、2つの折曲げ点41を有し、側棒連結リンク40の両端が、それぞれ、側棒スリーブ39に固定されている。

【0045】各側棒スリーブ39には、螺旋状に延びるガイド溝42がそれぞれ形成される。また、各側棒16には、ガイド溝42内に受入れられるガイドピン43がそれぞれ設けられる。

【0046】図6には、側棒スリーブ39の展開図が示されている。各側棒スリーブ39には、側方へ張出す起動片44がそれぞれ形成されている。この起動片44は、乳母車が開いた状態から閉じた状態に移行する初期の段階において、前脚3に当接し、これによって、側棒スリーブ39を側棒16上でスライドさせるための力が前脚3から与えられる。

【0047】次に、以上、主として構成について説明した折りたたみ式乳母車の動作を説明する。

【0048】まず、図1および図2に示す乳母車の開いた状態では、骨組の各側面を構成する部材にあっては、反転部材8が後脚6の上半部に沿うように回転されており、そのため、押棒10が相対的に上の位置にもたせられている。この状態で、ロックブロック15によって、押棒10と反転部材8との相対的な動きが禁止されており、したがって、これら押棒10および反転部材8と、手摺部材1と、後脚6とによって、固定された三角形が形成されている。また、前脚3と、後脚6と、側棒16とによっても、別の三角形が形成されている。これらのことから、乳母車の開いた状態が維持されている。このとき、骨組の幅方向寸法を規定する部材にあっては、上述した各側面を構成する部材の固定に伴って、それぞれの動きが禁止されている。特に、前脚スリーブ23および後脚スリーブ31の各々において、ガイドピン27および35がガイド溝26および34の回転禁止部28および36にそれぞれ位置していることから、これら前脚スリーブ23および後脚スリーブ31が、それぞれ、前脚3および後脚6の中心軸線まわりに回転できない状態となっていることにも注目すべきである。これによって、前脚連結リンク24および後脚連結リンク32の折曲げが、より強固に禁止されることができる。

【0049】このような開いた状態にある折りたたみ式乳母車を、折りたたんだ状態、すなわち閉じた状態にするには、まず、ロック解除操作ボタン14が押圧操作される。これによって、ロックブロック15が、押棒10に沿って上方へ変位され、反転部材8との係合が解かれる。

【0050】次に、ロック解除操作ボタン14を押圧操作しながら押棒連結部材13を持つ手を後方へ寄せ、後輪7を地面につけたまま、前輪5を中に浮かせるように、この乳母車を後方へ傾ける。これによって、押棒連結部材13が折れ曲がるとともに、反転部材8が矢印45方向に回転する。反転部材8のこのような矢印45方

向への回転がある程度進んだ状態が、図4に示されている。

【0051】反転部材8の上述したような回転に応じて、反転部材張出部37に連結された後脚剛性リンク38は、後脚スリーブ31を、矢印46で示すように後脚6に沿って上方へ引き上げる。これに応じて、ガイド溝34内でガイドピン35が移動するが、ガイド溝34が螺旋状に延びるように形成されているので、後脚スリーブ31は、矢印47方向に回転させられる。これによって、後脚連結リンク32は、折曲げ点33を介して折曲げられる。

【0052】上述した反転部材8の矢印45方向への回転は、側棒16を介して前脚3にも伝達され、前脚3が、後脚6に向かって引き寄せられる。

【0053】このとき、側棒16は、前脚3に対して矢印48方向に回転する。したがって、側棒張出部29に連結された前脚剛性リンク30は、前脚スリーブ23を、矢印49で示すように、前脚3に沿って引き上げる。このとき、ガイド溝26内でガイドピン27が移動するが、ガイド溝26が螺旋状に延びるように形成されているので、前脚スリーブ23は、矢印50方向に回転させられる。これによって、前脚連結リンク24が、折曲げ点25を介して折曲げられる。

【0054】他方、上述した側棒16の、前脚3に対する矢印48方向に回転の結果、前脚3は、起動片44を介して、側棒スリーブ39に対して、これを側棒16に沿って矢印51方向へスライドさせる力を与える。このとき、ガイド溝42内でガイドピン43が移動するが、ガイド溝42が螺旋状に延びるように形成されているので、側棒スリーブ39には、矢印52方向の回転が与えられる。これによって、側棒連結リンク40は、折曲げ点41を介して折曲げられる。

【0055】上述したような動作は、さらに進行し、最終的に、図3に示すような閉じた状態とされる。この状態において、ロックブロック15が、再び反転部材8の別の部分に係合し、これによって、この閉じた状態が維持される。この閉じた状態において、前輪5および後輪7は、前後方向に整列するので、この乳母車は、自立可能である。なお、図3において示された押棒連結部材13、前脚連結リンク24、後脚連結リンク32、および側棒連結リンク40の状態からわかるように、この乳母車は、幅方向に関しては、左右の前輪5および左右の後輪7がそれぞれほぼ接触する程度にまで折りたたまれる。

【0056】逆に、図3に示した閉じた状態から図1および図2に示した状態にするには、基本的には、上述の動作を逆にたどるようによればよい。その途中では、前述した場合と同様に、図4に示す状態を通過する。

【0057】以上、この発明を、図示した好ましい実施例に関して説明したが、この発明の範囲内において、そ

の他いくつかの変形例も可能である。したがって、上述した実施例には、この発明にとって必須の構成要件以外の要素も含まれている。

【0058】たとえば、側棒連結部材22に関して、これが側棒スリーブ39および側棒連結リンク40を備えていたが、側棒連結部材22に相当する部材が、1対の側棒16の互いの近接によって自然に折曲げられるものであれば、上述した実施例のように、側棒スリーブ39および側棒連結リンク40のような構成を備える必要はない。

【0059】また、側棒連結部材22は、乳母車の開いた状態での強度を高めるものであるが、このような利点を望まないならば、側棒連結部材22は、設けられていなくてもよい。

【0060】また、押棒連結部材13についても同様である。すなわち、押棒連結部材13は、乳母車の開いた状態の強度を高めるものであるが、このような利点を望まないならば、設けられていなくてもよい。なお、押棒連結部材13が設けられていないために、乳母車の開いた状態での強度が不足する場合には、このような乳母車の他の部分において幅方向に連結する部材を用いればよい。このとき、たとえば、乳母車の座席の背もたれ部において幅方向に延びる部材を、乳母車の開いた状態の強度を高めるために用いることもできる。

【0061】また、上述したようなスリーブ23、31、39および連結リンク24、32、40を備える連結部材20、21、22を含み、スリーブ23、31、39にガイド溝26、34、42が形成され、前脚3、後脚6および側棒16のような棒状部材にガイドピン27、35、43が設けられた、折りたたみ機構は、折りたたみ式乳母車の他の部分に用いることも、図示した形式以外の折りたたみ式乳母車にも用いることができる。

【図面の簡単な説明】

【図1】この発明の一実施例による折りたたみ式乳母車の開いた状態を示す右側面図である。

【図2】図1に示した乳母車の背面図である。

【図3】図1に示した乳母車の閉じた状態を示す右側面図である。

【図4】図1に示した乳母車の折りたたみ動作の途中の状態を示す斜視図である。

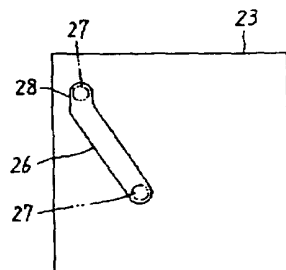
【図5】前脚スリーブ23の展開図である。

【図6】側棒スリーブ39の展開図である。

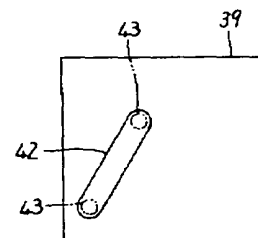
【符号の説明】

- 1 手摺部材
- 3 前脚
- 4 枢支ピン
- 5 前輪
- 6 後脚
- 7 後輪
- 8 反転部材
- 9 枢支ピン（第1の枢支点）
- 10 押棒
- 11、12 枢支ピン
- 16 側棒
- 18 枢支ピン（第2の枢支点）
- 20 前脚連結部材
- 21 後脚連結部材
- 23 前脚スリーブ
- 24 前脚連結リンク
- 25 折曲げ点
- 26 ガイド溝
- 27 ガイドピン
- 29 側棒張出部
- 30 前脚剛性リンク
- 31 後脚スリーブ
- 32 後脚連結リンク
- 33 折曲げ点
- 34 ガイド溝
- 35 ガイドピン
- 37 反転部材張出部
- 38 後脚剛性リンク

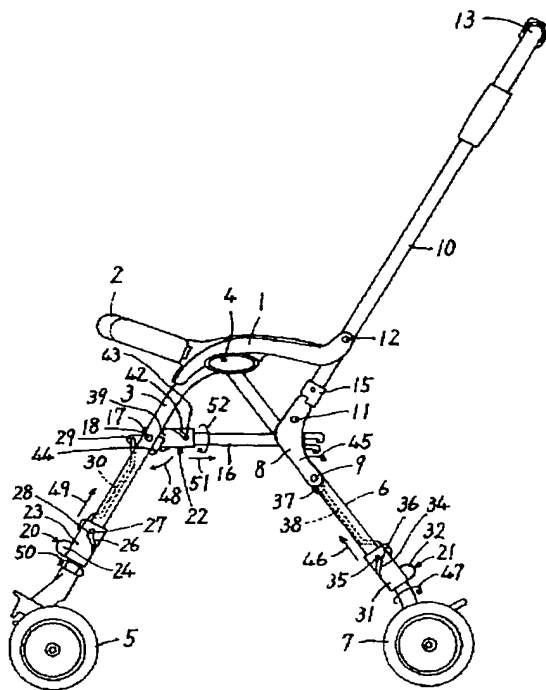
【図5】



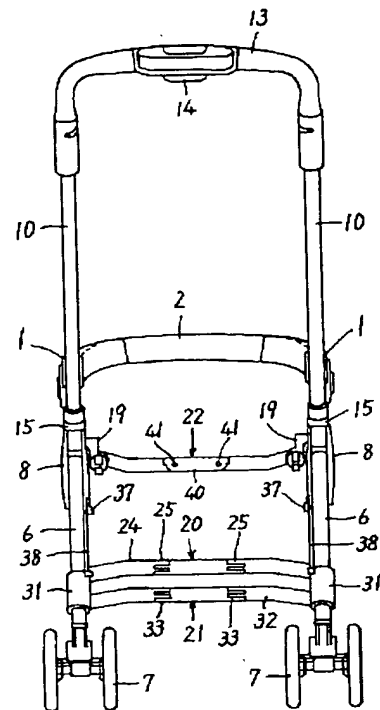
【図6】



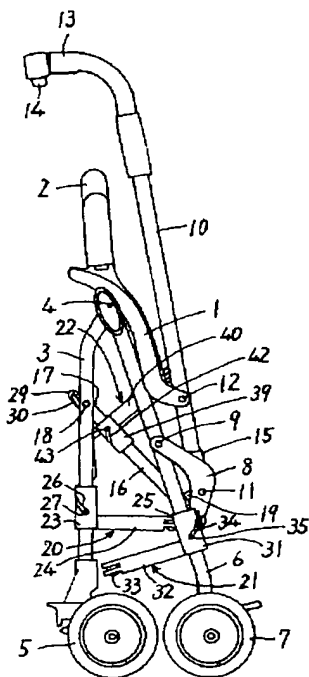
【図1】



【図2】



【図3】



【図4】

